

REMARKS

Claims 1-13 are pending in the present application. Claims 1-13 are rejected. Claim 9 is herein canceled. Claims 1, 3 and 8 are herein amended. New claims 14-16 have been added. No new matter has been added.

Claim Rejections - 35 U.S.C. §103

Claims 1-7 are rejected under 35 U.S.C. §103(a) as being unpatentable over Nishimura et al. (US-5495105) in view of Martin et al. (US-4887721 in further view of Mitsuhiro (JP-4370089). Referring to claims 1-7, the Examiner admits that Nishimura et al. does not disclose wherein the fine particles are recovered. However, the Examiner asserts that the fine particles are inherently recovered because it is disclosed they are separated from the stream of particles. The Examiner concludes that it would have been obvious to modify the apparatus of Nishimura et al. to include the teachings of Martin et al. and Mitsuhiro so that the fine particles were deflected and subsequently recovered in addition to having target fine particles irradiating with a laser beam.

Claims 8-10, 13 are rejected under 35 U.S.C. §103(a) as being unpatentable over Nishimura et al. Referring to claim 10, the Examiner admits that Nishimura et al. does not disclose wherein the laser beam emitter has at least two emitting apertures, and wherein the collector has chambers corresponding in number to the emitting apertures. The Examiner concludes that it would have been obvious to modify the apparatus of Nishimura et al. to include multiple emitting apertures and chambers that would correspond in number to the emitting

apertures so that multiple target fine particles could be deflected and separated into respective chambers which would help speed up the process and save money by allowing more than one type of fine particle to be separated at one time.

Claims 11-12 are rejected under 35 U.S.C. §103(a) as being unpatentable over Nishimura et al. in view of Martin et al. in further view of Mitsuhiro (JP-4370089).

Referring to claims 11-12, the Examiner admits that Nishimura et al. does not disclose wherein the detection and analysis portions are linked to the laser beam emitter, so that fine particles and targeted fine particles in the gas and liquid stream passing through the flow path are selected based on data obtained in the detection and analysis portions and so that only the selected target fine particles are irradiated with the laser beam. The Examiner concludes that it would have been obvious to modify the apparatus of Nishimura et al. to include the teachings of Mitsuhiro in which a detection and analysis portion was linked to the laser beam emitter so that only the targeted fine particles were irradiated so that it was easier to separated and sort multiple types of fine particles from one another which would make the process more efficient by saving time and money by separating multiple fine particles in streams in one step.

Applicants' Response

Applicants herein amend the claims to clarify the invention. Thereafter, Applicants respectfully disagree with the rejections because not all of the claimed limitations are met by the cited combination of references.

Applicants note that Nishimura et al. merely discloses a laser trapping technique for capturing fine particles. That is to say, Nishimura et al. merely discloses the method and the apparatus for capturing fine particles with a laser beam thereby to stop the movement, or control the position or direction of fine particles.

Mitsuhiro, on the other hand, may be closer to the present invention than Nishimura, in that it discloses a method for controlling the position or direction of fine particles using such a laser trapping technique thereby to separate target fine particles.

Applicants note that the separation of fine particles disclosed in Mitsuhiro, however, is performed inside the flow path of fine particles (see FIG. 1). Mitsuhiro therefore does not disclose a technique for deflecting the direction of movement of fine particles by the optical pressure of a laser beam, and guiding the fine particles into a collector (chamber) located outside the flow path for recovery of the fine particles.

In order to clarify the difference between the present invention and the cited combination of references, claims 1, 3 and 8 have been amended as shown in the attached appendix. The amendments clarify that the method and apparatus for recovering fine particles responsive to optical pressure to migrate to the convergence point of a laser beam, and are for recovering target fine particles in the collector by adjusting the position of the convergence of a laser beam to be inside the collector located outside the flow path of fine particles.

We believe that this amendment clarifies the difference between the present invention and Nishimura and Mitsuhiro. Moreover, even if the cited references were combined, Applicants submit that the present invention is not taught or suggested.

Application No. 10/533,109
Attorney Docket No. 052525

Amendment under 37 C.F.R. §1.111
Amendment filed: February 28, 2007

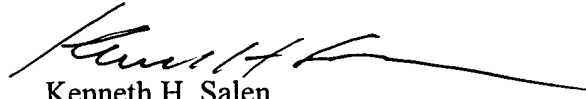
In view of the aforementioned amendments and accompanying remarks, Applicants submit that the claims, as herein amended, are in condition for allowance. Applicants request such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP



Kenneth H. Salen

Attorney for Applicants
Registration No. 43,077
Telephone: (202) 822-1100
Facsimile: (202) 822-1111

KHS/rf